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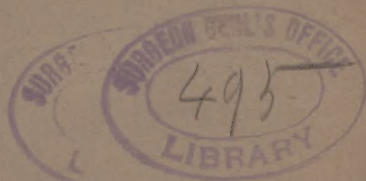
SOME POINTS BEARING UPON THE PROGNOSIS AND TREATMENT  
OF  
VALVULAR HEART DISEASE.

BY  
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Reprinted from the HAHNEMANNIAN MONTHLY, December, 1892.

*presented by the author*

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# SOME POINTS BEARING UPON THE PROGNOSIS AND TREATMENT

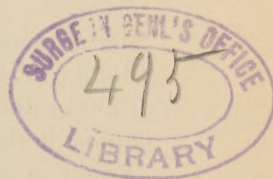
## OF

### VALVULAR HEART DISEASE.

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WHAT is the relative prognosis of the several anatomical lesions of the cardiac valvular apparatus, conditions or circumstances being equal? is a question constantly confronting us in considering the most frequent and most important diseases of the heart. While the question is difficult to estimate, we naturally turn to the valves of the left side of the heart as those in which our interest is chiefly centred. All authorities practically admit that *aortic regurgitation* is the most dangerous condition, the shortest in duration, the least responsive to remedial assistance and the most liable to sudden death. Still, the prognosis in this lesion, like in all others, is essentially one of efficient compensation, and as long as we find an apex beat in normal position, with regular rhythm, the outcome of the aortic lesion need not be a source of worry. This holds good in all valvular lesions, no matter where located. It has been stated and verified time and again that a cardiac valvular murmur, of itself, has but little prognostic value. The ratio this aortic condition bears to other valve diseases is variously estimated from 30 to 50 per cent. Halting a minute to review the causes of an insufficient aortic valve, we must admit congenital malformations, such as segment fusion, to be an important factor. It seems evident that a fusion of two segments of an aortic valve is stimulating to a condition of sclerotic endocarditis. Acute endocarditis of simple rheumatic origin, or that attendant upon or associated with specific fevers, plays a much milder part with the aortic valves than with the mitral; the storm passes by, leaving the aortic segments in perfect coaptation on closure—in fact, it



seems to never produce aortic incompetency unless it passes to the stage of ulceration and destruction, in which case a rapidly fatal termination is the usual result.

The most frequent cause of insufficiency at the aortic orifice is an insidious, slowly progressive sclerosis of a valve segment, resulting in a turning or curling upon itself of the thin free margin of the valve, classed usually as a result of acute endocarditis, but is found in many cases in strong, robust individuals without a trace of rheumatic history or of any of the special febrile conditions having endocarditis as an accompaniment. In these cases *strain* will be found to be the important factor—that is, a persistent, long-continued strain brought about by the heavy and prolonged use of muscles to the degree of excess, producing an abnormal tension on the valve segment during the period of the diastole of the ventricle—the condition in laborers, athletes and women in labor. Much has been written of late upon pregnancy and parturition as disturbing factors in the prognosis of valvular heart disease. In most instances I conceive the estimated importance of these two factors to be overrated, excepting possibly in the condition of aortic insufficiency or mitral stenosis or in combined lesions.

A recent case coming under my care impressed me greatly with the necessity of carefully weighing the best method of handling the second stage of labor complicated with this lesion either alone or in combination. A primipara of 33 years had been permitted to continue with vigorous but ineffectual labor pains for eight hours. When seen the pains were agonizing, with three- to five-minute intervals of rest, the patient's head and neck being swollen and cyanotic. This condition having existed for at least four hours, a rapid instrumental delivery, without anæsthesia, was accomplished, with apparent relief, the convalescence for ten days being all that could be expected. On getting up there was an immediate oncome of symptoms of ruptured compensation, resulting in death at ten weeks from date of confinement. Her history gave acute inflammatory rheumatic attacks at 12 and 20 years of age, with a resulting combined mitral and aortic lesion fully compensated for for at least thirteen years, and which was evidently broken by the continued eight-hour strain in the travail of labor.

Alcohol as a producing cause of aortic insufficiency is a good second to strain. The history of these cases usually shows a stereotyped recurrence of the combination of strain and alcohol, with syphilis thrown in to vary the monotony. The condition of sclerotic valve change is

often associated with atheroma, either fatty or calcareous, or with an endarteritis extending to the valves. If the diagnosis of either of these conditions can be established, the prognosis will be relatively of a more serious character. Aortic insufficiency due to traumatic segment rupturing is rare, especially in healthy subjects, although it may occur in cases of sudden excessive strain, as in the case of a miller under my notice, aged 44, apparently perfectly well, who was fixing some mill-stones. With assistance he turned one up on edge. Suddenly he noticed it was falling towards him, when he made what he termed the effort of his life, throwing himself against the stone and overbalancing it to the other side. It seemed to him as if something had given away in his chest, and he immediately felt sick and dizzy. He was assisted home, and when seen presented all the signs of aortic insufficiency. He recovered to the degree of being able to move around slowly, with a well-established murmur, but has never been able to perform any manual labor. It is now more than three years since the date of the accident.

Aortic insufficiency due to a relative dilatation of the aortic ring is rare, exceedingly so, although the natural tendency, from the fortieth year upward, is for the aortic ring to gradually increase in size, dilating frequently nearly 20 per cent. This physiological tendency at the period of life when the valve is most apt to be affected with sclerotic changes must not be overlooked.

The direct effect of aortic insufficiency is a regurgitation of blood from the aorta into the left ventricle during the period of the short interval of rest and the diastole. This causes an over-distension of the ventricle, with a subsequent dilatation and hypertrophy. It is in this lesion that dilatation and hypertrophy reach the greatest limit. The prognosis is largely dependent upon the condition of the coronary artery.

While we admit that aortic insufficiency is the most serious of all valvular troubles, and the one most apt to be associated with sudden death, we must remember that in a simple, uncomplicated case of aortic insufficiency which is fully compensated for by a condition of hypertrophy just sufficient to equalize the valvular defect, the patient may suffer no inconvenience and be able to pass a fairly active life for years. I have had a case under my personal observation for ten years, with a well-established aortic failure, who passed through a slight rheumatic seizure three years ago, at the age of 56, and who is now enjoying a fairly active life, with no unusual symptoms, excepting short attacks of palpitation two or three times annually.



Cases of this kind may exist for years, and only be accidentally discovered when searching for other conditions. With the onset of a mitral insufficiency there is a tendency to a rapid myocardial change, etc., and a rupture of compensation, the prognosis becoming uniformly unfavorable. If the insufficiency be associated with attacks of severe angina pectoris—a condition found with this valve lesion more than any other—the patient's friends should be warned of the impending danger of a sudden death.

The abrupt ending of life in cases of aortic regurgitation is usually due to either acute dilatation or to blocking of branches of the coronary arteries. It will be remembered that children, as a rule, are not subject to sudden death.

#### AORTIC STENOSIS.

In comparison with aortic insufficiency, a stenotic condition at this valve is very rare. In almost every case of stenosis there is some regurgitation or leakage, whereas regurgitation frequently exists without stenosis. It is usually met with in old men whose arterial system has undergone or is undergoing extensive calcareous change. In almost all cases it is associated with a dilated left ventricle, giving rise to a moderately enlarged cavity, or no increase at all, with a very much thickened muscular wall, provided, compensation is maintained; if not, then the usual changes rapidly ensue. Aortic obstruction is usually held to be the least serious of all the valvular lesions. It is a rare condition and is usually well compensated. In many instances it seems to have no influence upon the duration of life. We must bear in mind that there is a vast difference in the same physical condition when the result of different causes. For instance, an aortic lesion due to or caused by a rheumatic fever in a young person otherwise healthy requires a very different interpretation from the mechanical condition occurring as the result of chronic atheromatous arteritis with extensive degeneration of the arteries. In this latter case, even though the aortic stenosis may produce but slight symptoms, the friends of the patient must be informed that there may be a sudden and fatal syncope.

#### MITRAL INSUFFICIENCY.

Of all chronic valvular heart lesions, an uncomplicated primary mitral regurgitation is probably the least liable to the danger of sudden death, but it is the condition that is most speedily followed by pulmonary obstruction, venous engorgement and general anasarca; in other words, the water-logged state, or being drowned in

one's own fluid. On general principles, the prognosis of mitral insufficiency is much more favorable than the same condition at the aortic valve, and it is less favorable than aortic stenosis. The murmur of mitral insufficiency may be very pronounced in a recumbent position and totally absent in the erect, a condition that is apt to be misleading. The three classical features of mitral regurgitation: a systolic murmur of greatest intensity at the apex, transmitted to the axilla or to the lower angle of the left shoulder-blade; accentuation of the pulmonary second sound, and enlargement of heart transversely will usually establish the existence of this lesion. But we may find a well pronounced systolic murmur of maximum intensity at the apex, which is transmitted to the axilla, which is not associated with mitral incompetency, and which is known as an accidental murmur of unknown cause. With this lesion well marked, the prognosis for pregnant women is good, yet there is a liability to cardiac accidents during labor dependent upon the severe, long continued strain. The prognosis will be governed by the resisting or staying power of the patient.

It is claimed that in reality no valve lesion is so speedily fatal and so poorly compensated as that in which the mitral segments are curled upon themselves, puckering and forming a narrow rim around the wide-open mitral ring, a condition not infrequently found in children. In other cases, so great is the compensating ability of the heart's reserve that cases have been reported of unbroken compensation, lasting from thirty to forty years or more, with little or no distress, even in cases where hypertrophy has been well marked. The condition of mitral insufficiency is amenable to treatment, the results being usually satisfactory.

#### MITRAL STENOSIS.

Mitral stenosis in adults is more frequent than incompetency. These cases go on for a long period, and the prognosis is better than in mitral regurgitation, but the possibility of a recurrent endocarditis, with the probable tearing away of vegetations, which may fall into the blood current and be swept along the arterial highways until they block some smaller vessels like a cerebral artery and cause hæmiplegia or aphasia, or both, must be borne in mind, as well as the likelihood of life being cut short by sudden death in like manner. In such a case the prognosis of stenosis is, of course, more unfavorable than regurgitation. Stenosis of the mitral, in many cases, is thoroughly compensated for with hypertrophy, and is maintained



many years. Failure of compensation brings the usual train of symptoms dependent upon general cardiac degeneration, although the great majority of stenotic cases do not have dropsy. Mitral stenosis is by far the most dangerous cardiac lesion to pregnant and parturient women, and yet they may pass through repeated pregnancies with safety. Where this condition exists, marriage should be interdicted.

Whatever the lesion and wherever found, hypertrophy, as a rule, is desirable, while dilatation without hypertrophy, excepting to a small amount, is serious, and is to be viewed with regret as an element of danger. The best condition possible is the presence of a murmur with no physical signs of dilatation or hypertrophy, and with symptoms noted for their absence rather than presence, such as pallor, dizziness, dyspnoea, palpitation and other cardiac indications.

The combination of valvular lesions as an element in prognosis is without much value excepting in the extent. Aortic regurgitation is not materially affected by the presence of a mitral regurgitation. But when mitral regurgitation is complicated with a stenotic condition, it is far less amenable to treatment, and mitral stenosis takes on a new character and additional symptoms when regurgitation is present. A combined lesion in a pregnant woman is to be received with alarm. The result to the woman will probably be fatal, and the question of the forcible removal of the product of conception must be thoroughly weighed, the woman being given the benefit of a doubt.

The prognosis of all valvular conditions of the heart, on the whole, is better for women than for men, owing to the fact that woman's work is easier and life is more tranquil. This is particularly noticeable in mitral stenosis, to which they are more liable than men, and it is astonishing how they will revive from conditions that are apparently beyond hope. The great secret of success in these cases is to get the patient to adopt the motto of "moderation in all things," and to live faithfully to the idea. Hard work, exposure, dissipation, starvation, drink, exercise to fatigue, and excess of any kind are all disastrous to otherwise favorable cases.

All valvular diseases are of less importance than those of the cavities themselves, for dilatation, fatty or fibroid change of the walls of the cavities give rise to the most serious cardiac symptoms, and often result in sudden death.



TREATMENT—DIETETIC AND HYGIENIC.

The diet in all cases should be wholesome, easily digestible, and non-stimulating, tobacco and stimulants being rigidly prohibited. Exercise should be regulated by the patient's individual sense of fatigue, and will prove beneficial if there is no cardiac distress or palpitation. The action of the skin and bowels should be maintained, the former by baths in moderation, the latter by the indicated remedy. Turkish and Russian baths are to be avoided, as well as the ordinary hot bath. Coitus is not free from danger, especially in aortic insufficiency. High altitudes are to be avoided. To sum up under three cardinal conditions, mal-nutrition, mental worry, and over-exertion are a tripod of danger with death as a pendant centre.







